

## Module 8: Soft Tissue Trauma

1. **Which of the following is a major function of the skin?**
  - a. Excretion of wastes
  - b. Protection from the environment
  - c. Temperature regulation
  - d. All of the above
2. **Which of the following is the outermost layer of the skin?**
  - a. Dermis
  - b. Epidermis
  - c. Adipose tissue
  - d. Fascia
3. **Which of the following layers of the skin is the most important in insulating the body against heat loss?**
  - a. Parietal layer
  - b. Subcutaneous layer
  - c. Epidermis
  - d. Subdural layer
4. **Which of the following is required in the management of all open soft-tissue injuries?**
  - a. Provision of high-concentration oxygen
  - b. Use of Standard Precautions by the EMT
  - c. Cervical spine precautions
  - d. Application of a disinfectant solution
5. **An injury in which the epidermis remains intact, but blood vessels and cells in the dermis are injured, is called a(n):**
  - a. contusion.
  - b. abrasion.
  - c. concussion.
  - d. avulsion.
6. **Which type of wound has a small opening into the skin, but may be quite deep, and is often caused by instruments such as nails, ice picks, or pencils?**
  - a. Avulsion
  - b. Laceration
  - c. Puncture
  - d. Incision
7. **A wound in which the epidermis is scraped away with minimal bleeding, such as commonly occurs when a child falls on his knees on a sidewalk, is called a(n):**
  - a. abrasion.
  - b. contusion.
  - c. avulsion.
  - d. evisceration.
8. **An injury caused by heavy pressure to the tissues, such as when an extremity is trapped under a fallen tree, that results in damage to muscle cells and the accumulation of waste products in the tissue is called a(n):**
  - a. crush injury.
  - b. evisceration.
  - c. contusion.
  - d. abrasion.

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9. **Which of the following BEST describes an avulsion?**
  - a. An injury caused by a sharp, pointed object
  - b. A flap of skin that is partially or completely torn away from the underlying tissue
  - c. The epidermis that is scraped away by a rough surface
  - d. An accumulation of blood beneath the skin, resulting in swelling
10. **Bleeding from soft-tissue injuries should initially be controlled with which one of the following techniques?**
  - a. Application of an ice pack or chemical cold pack
  - b. Direct pressure
  - c. Elevation of the injured part
  - d. Running cold water over the wound
11. **Which of the following is NOT an open tissue injury?**
  - a. Abrasion
  - b. Contusion
  - c. Avulsion
  - d. Evisceration
12. **A 36-year-old man has accidentally shot a nail into his thigh while using a nail gun. Under which of the following circumstances should the EMT remove the nail from the injury site?**
  - a. The nail is less than 2 inches in length.
  - b. The patient's distal pulse, motor function, and sensation are intact.
  - c. Bleeding from the wound is minimal.
  - d. None of the above
13. **Which of the following injuries requires the use of an occlusive dressing?**
  - a. An open wound to the neck
  - b. An open wound to the abdomen from which a loop of intestine is protruding
  - c. An open wound to the chest
  - d. All of the above
14. **Which of the following is recommended when caring for an amputated part?**
  - a. Rinse away debris with saline solution and place the part in a container of ice.
  - b. Wrap the part in aluminum foil to preserve body temperature.
  - c. Seal the part in a plastic bag and place it in a pan of water cooled by an ice pack.
  - d. Always transport the amputated part with the patient.
15. **A burn extending into the subcutaneous fat would be classified as which type of burn?**
  - a. Deep partial thickness
  - b. Full thickness
  - c. Superficial partial thickness
  - d. Superficial
16. **Which of the following BEST describes a partial thickness burn?**
  - a. The skin is red, but dry and painful.
  - b. The skin is charred or blackened and lacks sensation.
  - c. The skin is white and dry with no sensation of pain.
  - d. The skin is red and moist with blister formation.
17. **Your patient is a 25-year-old man who picked up an iron skillet with a very hot handle. He has a reddened area with blisters across the palm of his hand. Which of the following must be avoided in the prehospital management of this wound?**
  - a. Application of a dry, sterile dressing
  - b. Application of antibiotic ointment
  - c. Elevation of the wound above the level of the heart
  - d. Keeping the site clean

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18. **Your patient is a 35-year-old female who spilled a cup of hot coffee on herself. She has an area about twice the size of the palm of her hand on her right thigh that is red and painful, but without blisters. When caring for this injury in the prehospital setting, which of the following is appropriate?**
- Apply an antibiotic ointment.
  - Apply a lotion containing a topical anesthetic and aloe vera.
  - Apply a plastic bag full of ice to the skin.
  - Apply a dry sterile dressing.
19. **Which of the following patients has the greatest likelihood of being cared for in a burn center?**
- A 45-year-old man who has a full thickness burn about 3 inches long by 1/2 inch wide on his posterior arm from backing into a barbecue grill
  - A 30-year-old woman who has deep partial thickness burns on her hand and arm as a result of spilling hot cooking oil on herself
  - A 12-year-old male with a superficial partial thickness burn involving his forearm as a result of making a torch by lighting aerosol from a can of hairspray
  - A 16-year-old female who came into contact with a motorcycle exhaust pipe and has a full thickness burn on her leg about 2 inches in diameter
20. **For which of the following patients should the EMT carefully continue to monitor the patient's ventilatory status throughout treatment and transport due to the greatest risk of respiratory failure?**
- A 17-year-old male with a blistering sunburn on his face
  - A 34-year-old male who opened the radiator of his car and had hot fluid spray on his chest, resulting in redness and pain in an area about the size of the patient's hand
  - A 28-year-old male who spilled a strong industrial acid on his legs
  - A 16-year-old male whose shirt caught on fire, resulting in circumferential burns of his chest
21. **Which of the following is a desirable characteristic of dressings used in the prehospital management of most open wounds?**
- Absorbent
  - Occlusive
  - Adherent
  - Sterile
22. **In caring for a 27-year-old male who has a large laceration on his anterior forearm, you have noticed that your pressure dressing has become saturated with blood. Which of the following should you do next?**
- Remove the saturated dressings and apply a large trauma dressing.
  - Apply an ice pack over the original dressing.
  - Apply a tourniquet.
  - Apply additional dressing material over the top of the original dressing and bandage it in place.
23. **Your patient is a 55-year-old male who was found in the parking lot behind a tavern. He states that he was assaulted and robbed by three individuals. He is complaining of being "hit in the face and kicked and punched in his ribs and stomach." Your examination reveals contusions and swelling around both eyes, bleeding from the nose, a laceration of his upper lip, and multiple contusions of the chest, abdomen, and flanks. Which of the following should cause the greatest concern regarding the prehospital care of this patient?**
- The presence of any defensive wounds the patient may have sustained
  - The swelling around his eyes, which may be reduced by applying a cold pack
  - Potential internal injuries
  - Getting a description of the assailants

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24. **Which of the following is NOT appropriate in caring for a patient with closed soft-tissue injuries and a significant mechanism of injury?**
- Treat for shock if you think there are internal injuries even if the patient's vital signs are normal.
  - Anticipate vomiting.
  - Splint any swollen, deformed extremities.
  - All of the above are appropriate.
25. **Which of the following is true concerning lacerations?**
- They may indicate deeper underlying tissue damage.
  - They may be caused by penetrating trauma.
  - They may be caused by blunt trauma.
  - All of the above
26. **Which of the following is of concern with a puncture wound?**
- An object that remains impaled in the body
  - Hidden internal bleeding with minimal external bleeding
  - A strong possibility of contamination
  - All of the above
27. **Which of the following is NOT a type of avulsion?**
- The skin is partially torn away from the foot.
  - A finger is cut off with a butcher's saw.
  - An ear is partially torn away from the head.
  - The skin is stripped off the hand, like removing a glove.
28. **Your patient is a 14-year-old male who crashed his bicycle, landing prone and sliding along a gravel trail. He has deep abrasions to his hands, arms, chest, and knees. The patient has small pieces of gravel, twigs, and dirt embedded in the abrasions. Which of the following is the best way to manage this situation after taking cervical spine immobilization?**
- Use your fingers to pick embedded debris from the wound, bandage with moist saline dressings in place, and transport.
  - Do not attempt to remove any debris, apply pressure dressings over the embedded material if necessary, apply high-concentration oxygen, and transport.
  - Use a tongue depressor to scrape large pieces of debris out of the wounds, place the patient on high-concentration oxygen, and transport.
  - Assess for additional injuries, flush away large pieces of debris with a sterile dressing, place dressings on the abrasions, bandage them in place, and transport.
29. **Your patient is a 32-year-old man with a fish hook that has perforated his hand between the thumb and index finger. Which of the following is the best way to manage the situation in the prehospital setting?**
- Push the hook through the wound to avoid further damage from the barbed end.
  - Leave the hook in place and try not to disturb it.
  - Apply a pressure dressing over the hook.
  - Pull the hook out from the same direction in which it entered the hand.
30. **Which of the following is a consideration in determining a burn's severity?**
- Other illnesses or injuries the patient may have
  - Body surface area involved in the burn
  - The type of agent that caused the burn
  - All of the above

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31. **Your patient is a 40-year-old man who was burned when he spilled gasoline on his pants as he was standing near the pilot light of his hot water heater. He has partial thickness burns from his feet to just above his knees, and circumferentially around both legs. Using the rule of nines, which of the following most accurately represents the extent of body surface area burned?**
- 18 percent
  - 9 percent
  - 36 percent
  - 4.5 percent
32. **Which of the following is of concern in a patient who received burns to his hand when he grabbed a live electrical wire?**
- The extent of tissue damage may be much greater than it appears on the surface.
  - The burning will continue for hours, perhaps days.
  - The patient remains an electrocution hazard to rescuers for several minutes after being removed from the source of electricity.
  - Toxic gases were inhaled.
33. **Your patient is a 40-year-old male who has been exposed to a dry chemical powder and is complaining of severe pain on both of his hands, the site of the contact. He is working in an illegal chemical manufacturing plant and there is no decontamination shower on site. Which of the following would be the BEST way to manage this situation?**
- Have the fire department connect to a hydrant and spray down the patient from head to toe.
  - Brush away as much powder as possible and then pour a bottle of sterile saline solution over his hands.
  - Brush away as much of the powder as possible and then have the patient hold his hands under running water from a faucet or regular garden hose.
  - Brush away the powder and bandage the hands in a position of function.
34. **While assessing a 78-year-old male patient who escaped an apartment fire with partial thickness burns to both arms, the EMT must be aware of which of the following?**
- Being involved in a crime makes the patient part of the chain of evidence, requiring a police officer to ride with you to the hospital.
  - The burn is the most serious injury to the patient.
  - Medical conditions may be aggravated by the burn.
  - The patient may need to be questioned by police and fire officials about the cause of the fire.
35. **Burns pose a greater risk to infants and children for which of the following reasons?**
- Pediatric patients have a greater risk of heart problems associated with the burn.
  - Pediatric patients have a greater risk of shock from the burn.
  - Infants and children have a greater risk of infection from the burn.
  - None of the above
36. **You are assessing a 30-year-old male patient that had his arm caught in a piece of machinery. By the time you arrive he has been freed. The patient tells you that he does not understand why you were called, but as you inspect the injured limb you notice a small puncture wound. You should have a high index of suspicion of which of the following injuries?**
- Puncture
  - Crush injury
  - Chemical burn
  - High-pressure injection
37. **While assessing a patient with partial thickness burns to his chest and neck, what should be your highest priority (even if there are no symptoms presently)?**
- None of the choices
  - Airway
  - Hypothermia
  - Bleeding

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38. **You assess a 35-year-old female patient with a chemical burn to her right forearm and hand. As you assess the burn, you notice a white powder on the burn. What should be your next step?**
- Transport the patient immediately to the closest burn center.
  - Brush the powder off the patient's arm and hand, and then flush with copious amounts of water.
  - Flush the arm and hand with copious amounts of water.
  - Brush off the powder, bandage the arm, and transport the patient to the closest trauma center.
39. **When using the rule of palm to estimate the approximate body surface area burned, the patient's palm equals about what percentage of the body's surface area?**
- 1 percent
  - 2 percent
  - 5 percent
  - 3 percent
40. **According to the Rule of Nines for infants and young children, the patient's head and neck account for what percentage of the total body surface area?**
- 13.5 percent
  - 14 percent
  - 9 percent
  - 18 percent
41. **You are dispatched to the local high school for a "person struck with a baseball." You arrive on the scene and find a 16-year-old male sitting on the bench. Apparently he was the pitcher and was struck in the abdominal area by a line drive ball that was hit very hard. He states that nothing is hurting except he has some mild pain in the area where he was struck. He is upset that the ambulance was called and wants to go back into the game and continue pitching. Your exam reveals nothing remarkable except mild pain when you palpate the injured area. Vital signs are normal. What is the next step?**
- Have the coach apply cold to the area and let the pitcher back in the game if he does not get worse in the next 15 minutes.
  - Have the patient walk to the ambulance and take him to the ED. No other care needs to be provided, as there is really no significant sign of any injury.
  - Take appropriate Standard Precautions, apply high-concentration oxygen by nonrebreather mask, and transport the patient ASAP, carefully monitoring the patient during transport.
  - Tell the coach the patient is okay and he can go back into the ball game.
42. **You are dispatched to an auto repair shop for an "accident." You arrive and are told by the owner that one of the workers apparently got his hand in the way while using a high-pressure grease gun and injected the grease into his hand. You find the patient seated in a chair with a coworker applying ice to the injured hand. Your examination reveals a minor round laceration in the hand. The patient is complaining of pain in the area but wants to let the wound take care of itself and go back to work. What should you do?**
- The patient is correct. This type of wound will heal on its own and he can go back to work.
  - Remove the ice from the wound, then elevate and splint the limb. Transport the patient high priority.
  - Continue to apply cold, elevate and splint the limb, and transport the patient high priority.
  - Tell the patient that if it does not get better within the next few days he should consult his own doctor.
43. **You are dispatched to the local elementary school for an injured student. Upon arrival you find that two 7-year-olds got into a fight and one of them jabbed a pencil in the other's cheek. The pencil is still sticking out of the child's cheek. When you examine the patient, you cannot see the end of the pencil that went through the cheek, as it appears to be stuck in the palate. There is not significant bleeding, and the child is not having any difficulty breathing. The child is very upset and wants you to pull the pencil out. What should you do?**
- Stabilize the object, but do not try to remove it.
  - Remove the object and put a bandage on the outside of the cheek.
  - Call the parents and see what they want you to do.
  - Let the child carefully pull the object out.

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44. **You are dispatched to an industrial plant for a burn. You arrive and find a 60-year-old male who came in contact with a broken steam line and appears to have partial thickness burns on both hands and arms. He is lying on the ground and coworkers are gently spraying him with water from a nearby hose. What should you do?**
- Because of his age, immediately put him in your ambulance and transport him to a burn center.
  - Call for air transport and continue to pour water on the burns until transport arrives.
  - Care for the burn and do a complete patient assessment, including cervical spine precautions.
  - Before doing treatment, call the local burn center for instruction.
45. **You are dispatched to a local industrial plant for an "electrical injury." You arrive on-scene and find a 46-year-old male lying supine in front of an electrical panel. You are told he was attempting to make a repair and somehow received an electrical shock and was thrown to the ground. The scene is safe and the electricity is off. Your initial exam reveals a conscious person, breathing adequately. Vital signs are normal and there are no obvious signs of burns. Coworkers state that he was unconscious until your arrival. What is the next step?**
- Load and go—conduct any other care in the ambulance en route due to the potential seriousness of the burns.
  - Put the patient on oxygen and help him into your ambulance.
  - Stay with the patient awhile, and if he does not appear to be in distress, encourage him to refuse care.
  - While on the scene, rapidly do a complete assessment, provide oxygen, provide care for potential spine injuries, and transport as soon as possible after the exam.
46. **You are examining a 48-year-old patient who has been burned. You decide to use the rule of palm to measure the extent of the burn. What does this mean?**
- The palm of your hand represents 1 percent of the body's surface area.
  - The palm of the patient's hand equals about 1 percent of the body's surface area.
  - The palm of the patient's hand equals 9 percent of the body's surface area.
  - You can only use the rule of palm for children, so you would use the rule of nines instead.
47. **You are treating the amputation of three fingers on a 40-year-old male. The fingers were torn off while he was cleaning his snow blower. You have stopped the bleeding. What should you do with the amputated fingers?**
- Fingers cannot be reattached so you can discard them in red bag trash.
  - Because it is cold out, you merely need to wrap them in a 5 x 9 dressing and give them to the staff at the ED.
  - Wrap them in a sterile dressing, put them in a plastic bag, and keep them cool.
  - Place the fingers directly on ice or use cold packs, as they must be kept very cold.
48. **You are treating a 5-year-old for extensive burns. You know that burns pose a greater risk to infants and children. The reason for this is:**
- the parents' interference with your assessment and treatment can delay your response.
  - the child will likely be upset and crying and therefore hard to evaluate.
  - child abuse is usually the reason for the burns.
  - their body surface area is greater in relation to their total body size.
49. **You are caring for a 23-year-old female who fell off of a bicycle and sustained a severe laceration on the inside of her upper thigh. Her slacks are torn, and you can see most of the wound. What is the next step?**
- You can treat the wound without total exposure as exposing a wound in that area of the body could be embarrassing.
  - You need to expose the wound completely because you need to clear away any embedded particles and debris from the wound.
  - You need to expose the wound completely, control bleeding, clean the surface by simply removing large pieces of foreign matter if any, and dress and bandage the wound.
  - You need to make sure the wound is very clean before trying to control bleeding by exposing the wound completely and cleaning it with alcohol.

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50. **A 37-year-old male was hit by a trolley and his foot was almost severed. It is only connected by some skin and crushed bone. What should you do?**
- Immediately apply a tourniquet to control bleeding.
  - Complete the amputation. It will make the injury much easier to handle.
  - Because of the seriousness of the injury, wait for ALS before providing any care.
  - Apply a pressure dressing to control bleeding, stabilize the foot by splinting, apply oxygen, and transport as a priority patient.
51. **Which of the following is *not* considered soft tissue?**
- The skin
  - Muscles
  - Membranes
  - Cartilage
52. **Which of the following correctly states characteristics of blast injuries?**
- Primary injuries occur because of the intense high pressure that hits the patients.
  - Secondary injury is the result of projectiles such as debris hitting the patient.
  - Tertiary injuries can include not just soft-tissue injuries but also fractures, avulsions, and amputations.
  - Quaternary injuries involve the lower quarter of the body, which is almost always injured during a blast.
53. **Which of the following statements is *not* true concerning the proper transport of an avulsed ear?**
- It should be labeled with the patient's name, as well as the date and time it was bagged.
  - It should be kept as cool as possible.
  - It should not be immersed in cooled water or saline.
  - It should be in a dry sterile dressing.
54. **The meatus is:**
- an orifice of the urethra.
  - in a male, the area between the scrotum and the anus.
  - the tube that carries urine from the kidney to the bladder.
  - the canal through which urine is discharged from the bladder to the exterior of the body.
55. **Which of the following is a description of the rule of nines for an adult?**
- The rule of nines assigns 9 percent to the head and neck, each upper extremity, the chest, the abdomen, the upper back, the lower back and buttocks, the front of each lower extremity, and the back of each lower extremity, then 1 percent to the genital region.
  - The rule of nines assigns 9 percent to the head and neck, as well as each upper extremity; 10 percent to the chest, the abdomen, and the upper back; 8 percent to the lower back and buttocks, the front of each lower extremity, and the back of each lower extremity, then 1 percent to the genital region.
  - The rule of nines assigns 9 percent to the head and neck, each upper extremity, the chest, the abdomen, the upper back, and the lower back and buttocks; 8 percent to the front of each lower extremity; and 10 percent for the back of each lower extremity, then 1 percent to the genital region.
  - The rule of nines assigns 9 percent to the head and neck; 6 percent to each upper extremity; 12 percent to the chest and abdomen; 9 percent to the upper back, the lower back and buttocks, the front of each lower extremity, and the back of each lower extremity, then 1 percent to the genital region.



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### Test Name: Mod. 8 Soft Tissue Trauma

1. d. All of the above
2. b. Epidermis
3. b. Subcutaneous layer
4. b. Use of Standard Precautions by the EMT
5. a. contusion.
6. c. Puncture
7. a. abrasion.
8. a. crush injury.
9. b. A flap of skin that is partially or completely torn away from the underlying tissue
10. b. Direct pressure
11. b. Contusion
12. d. None of the above
13. d. All of the above
14. c. Seal the part in a plastic bag and place it in a pan of water cooled by an ice pack.
15. b. Full thickness
16. d. The skin is red and moist with blister formation.
17. b. Application of antibiotic ointment
18. d. Apply a dry sterile dressing.
19. b. A 30-year-old woman who has deep partial thickness burns on her hand and arm as a result of spilling hot cooking oil on herself
20. d. A 16-year-old male whose shirt caught on fire, resulting in circumferential burns of his chest
21. d. Sterile
22. d. Apply additional dressing material over the top of the original dressing and bandage it in place.
23. c. Potential internal injuries
24. d. All of the above are appropriate.
25. d. All of the above
26. d. All of the above
27. b. A finger is cut off with a butcher's saw.
28. d. Assess for additional injuries, flush away large pieces of debris with a sterile dressing, place dressings on the abrasions, bandage them in place, and transport.
29. b. Leave the hook in place and try not to disturb it.
30. d. All of the above
31. a. 18 percent
32. a. The extent of tissue damage may be much greater than it appears on the surface.
33. c. Brush away as much of the powder as possible and then have the patient hold his hands under running water from a faucet or regular garden hose.
34. c. Medical conditions may be aggravated by the burn.
35. b. Pediatric patients have a greater risk of shock from the burn.
36. d. High-pressure injection
37. b. Airway
38. b. Brush the powder off the patient's arm and hand, and then flush with copious amounts of water.
39. a. 1 percent
40. d. 18 percent
41. c. Take appropriate Standard Precautions, apply high-concentration oxygen by nonrebreather mask, and transport the patient ASAP, carefully monitoring the patient during transport.
42. b. Remove the ice from the wound, then elevate and splint the limb. Transport the patient high priority.
43. a. Stabilize the object, but do not try to remove it.
44. c. Care for the burn and do a complete patient assessment, including cervical spine precautions.
45. d. While on the scene, rapidly do a complete assessment, provide oxygen, provide care for potential spine injuries, and transport as soon as possible after the exam.
46. b. The palm of the patient's hand equals about 1 percent of the body's surface area.
47. c. Wrap them in a sterile dressing, put them in a plastic bag, and keep them cool.
48. d. their body surface area is greater in relation to their total body size.
49. c. You need to expose the wound completely, control bleeding, clean the surface by simply removing large pieces of foreign matter if any, and dress and bandage the wound.

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- 50. d. Apply a pressure dressing to control bleeding, stabilize the foot by splinting, apply oxygen, and transport as a priority patient.
- 51. d. Cartilage
- 52. d. Quaternary injuries involve the lower quarter of the body, which is almost always injured during a blast.
- 53. d. It should be in a dry sterile dressing.
- 54. a. an orifice of the urethra.
- 55. a. The rules of nines assigns 9 percent to the head and neck, each upper extremity, the chest, the abdomen, the upper back, the lower back and buttocks, the front of each lower extremity, and the back of each lower extremity, then 1 percent to the genital region.